

Science and Math in Storytimes



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Early Science and Math Memories



Science is Everywhere!

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Welcome!

- Freelance educator, storyteller and musician
- 30 years experience working with preschool children
- Writes and designs a column for kids in Bee Culture Magazine
- Author of "Beekeeper's Lab: 52 Family Friendly Activities and Experiments Exploring the Life of the Hive" coming out May 2017



Kim Lehman

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Agenda

- Concept learning for young children
- Hands-on science and math activities
- Science and math in storytimes



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Concept Learning for Young Children

- Repetition
- Make comparisons and connections
- Observation
- Questions and predictions
- Summarizing



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Concept Learning for Young Children

- Three P's
 - Playful
 - Purposeful
 - Planned
- Three E's
 - Exposure
 - Experience
 - Explorations



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Math Concepts

What are some math concepts for young children?

Counting
Adding
Subtracting
Shapes
Measuring
Weight
Size

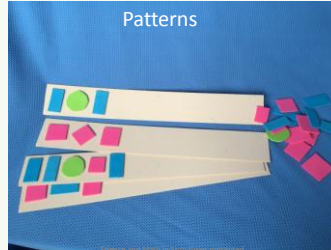
Patterns
Sorting
Compare/contrast
Graphing
One to one correspondence

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Hands-On Activities Storytime Extensions

Patterns



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Hands-On Activities Storytime Extensions

Sorting



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Hands-On Activities

Discovery Center

Sorting



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Hands-On Activities

Discovery Center

Counting



Mt Pleasant Library

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Science Concepts

What are some science concepts for young children?

- Sink and float
- Magnetism
- Motion of objects
- Volume
- Temperature –hot and cold
- Sun helps plants grow
- See the results of heat or light – boiling water, shadow games
- Characteristics of animals
- Compare differences and similarities of animals
- Living things have needs – water, air, light, nutrition
- Sort living and non-living
- Life cycle of plants and animals
- Animal homes and habitats
- Earth materials – their properties and uses
- Changes in the earth and sky
- Weather
- Shadows
- Objects in the sky
- Clouds, sun, stars, moon, rainbows

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Hands-On Activities

Storytime Extensions

Paper drop - gravity



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Hands-On Activities

Storytime Extensions

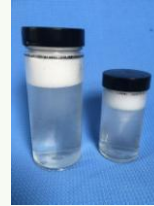


Color mixing bottles

<http://familylicious.com/color-mixing-discovery-bottles/>

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Weather - Tornado in a jar

Hands-On Water Explorations

- Storytime demonstrations and extenders
 - Water
 - Water cycle
 - Buoyancy
 - Weather
 - Seasons
- Science program with stations
- SRP kick off or finale
- Activities to do at home



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Hands-On Water Explorations

Buoyancy and Volume



- Foil boats

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Hands-On Water Explorations

Buoyancy and Volume

- Sink or float
- Measuring fun



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Hands-On Science Programs

Weather and Seasons

- Cloud in a jar

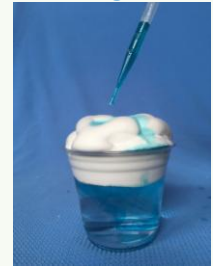
<http://www.teachersfirst.org/2012/03/01/cloud-in-jar-and-on-the-table-top-100/>

- Frost

<http://fifewiththimbletoes.blogspot.com/2013/02/diy-frost.html>

- Ice cube fishing

<http://www.coolscienceforkids.com/2010/10/ice-fishing-and-cold-mixing.html>



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Hands-On Science Programs

Compare and Contrast



Water absorption

<http://kidsactivitiesblog.com/23309/hands-on>

Bubble tray

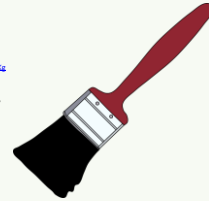
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Hands-On Science Programs

Surface Tension and Evaporation

- Pepper float – surface tension
<https://www.youtube.com/watch?v=2uq7b7m0f4>
- Paint with water



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Science and Math in Storytimes

Benefits

- Read-aloud activity – first exposure to a concept
- Vocabulary
- Conceptual understanding requires repetition and varied experiences



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Incorporating Science and Math in Storytimes

- Fiction and nonfiction books
- Fingerplays and poems
- Songs
- Activities
- Art
- Hands-on and storytime extensions
- Resources for parents

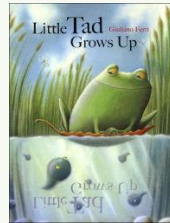


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Frog Storytime

Life Cycle - Metamorphosis



- Book - *Little Tad Grows Up* by Giuliano Ferri
- Song - (tune: Frere Jacques)
Little tadpole, Little tadpole
Lost his tail, lost his tail.
Now she has two feet
Now she has four feet
Look a frog! Look a frog!

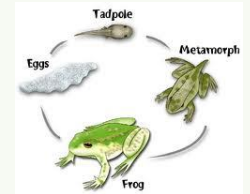
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Frog Storytime

Life Cycle - Metamorphosis

- Video - Frog Life Cycle
<https://www.youtube.com/watch?v=2U0o0Gf40ys>
- Nonfiction Books
- Craft - Life cycle of a frog
- Exploration Extensions
– Live frogs to observe

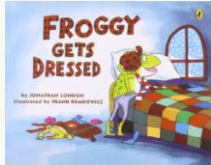


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Frog Storytime

Winter and Hibernation



- Book - ***Froggy Gets Dressed*** by Jonathan London
- Song - Hibernation Song
<https://www.pinterest.com/pin/34966417771661225/>
- Concept - Warm and cold
- Exploration Extensions
 - Frost
 - Ice cubes

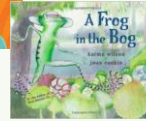
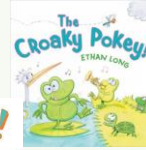
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Frog Storytime

Books: Food for Frogs

- ***The Croaky Pokey!***
by Ethan Long
- ***Ah Ha!***
by Jeff Mack
- ***A Frog in the Bog***
by Karma Wilson



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Frog Storytime

Books: Characteristics of Frogs

- ***Fabulous Frogs***
by Martin Jenkins
- ***Noisy Frog Sing-Along***
by John Himmelman

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Frog Storytime

Food for Frogs Craft



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Math Fingerplay

Five little froggies sitting on a well,
One peeked in and down he fell.
Froggies jumped high.
Froggies jumped low.
Froggies jumped everywhere to
and fro!



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Song

A Frog on My Toe

(Tune: There's a Spider on the Floor)

There's a frog on my toe, on my toe...I wish that he would go,
There's a frog on my knee...he's as slimy as can be...
There's a frog on my thigh...boy, he can sure jump high...
There's a frog on my tummy...and he's looking pretty yummy...
There's a frog on my shoulder...look at him, he's getting bolder...
There's a frog on my head...oh, and I want to go to bed...
There's a frog on my nose...uh, oh, thar' she blows...Ahhhchooo!

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Movement

Little Green Frog

Little green frog,
Hop on four feet, four feet.

Little green frog,
Hop on three feet, three feet.

Little green frog,
Hop on two feet, two feet.

Little green frog,
Hop on one foot, one foot.

Little green frog,
Sit on no feet, no feet.

How many times
can you hop in one
minute?

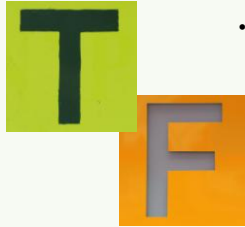


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Literacy Activity

Phonological Awareness



• Alliteration examples

- Funny frog
- Tiny tadpole

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Hands-On

Storytime Extensions or Discovery Centers

- Metamorphosis cards
- Pattern cards – different kinds of frogs



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Hands-On

Storytime Extensions or Discovery Centers

- Sorting
 - Number of legs
 - Habitat
- Lilypad Counting
- Frog Count



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Parents

- Write a poem about frogs
- Handout
- Video to watch
 - Frog Life Cycle

Tadpole
Small, brown
Swimming, swishing, wiggling
Tadpole



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Questions?



Thank You!

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